

Chapter 7

Noise

Chapter 7

Noise

7.1 Primary Issues

Comment C-8.069

7 1 # 69. The primary issue addressed is not in the interest of nearby residents. The standard for noise should be the degree to which it increases over established background noise levels.
Vashon-Maury Island Community Council

Response

The comment is noted. The standards for assessing project-related noise impacts under SEPA are based on King County noise standards, not on the increase over background sound levels. The noise impact analysis was prepared using accepted methods. As discussed in the DEIS, King County Code establishes limits and durations of noise crossing property boundaries. The allowable maximum sound levels depend on the zoning of the noise source and the zoning of the receiving property as shown in Table 7-2 of the DEIS.

7.2 Affected Environment

7.2.1 Background Information on Noise

No substantive comments received that specifically address this section.

7.2.2 Regulatory Overview

Comment

7.1.1. Again, are regulatory standards applicable to a 24x7 mining operation proposed for many years of operation that at some points will be within 50 feet of residential land? The issue appears to be potential alterations to quality of life and as such, may be difficult to resolve.

Kuperberg, J. Michael, Ph.D.

Response

The King County noise limits would be applicable to all phases of the proposed project.

Comment 7.8.1. The modeled noise values are less than the County codes. However, the intended use of the County codes also should be reviewed.
Kuperberg, J. Michael, Ph.D.

Response King County codes are intended to protect the environment and provide for public health and safety. As noted in Table 7-2, noise limits are based on the land use classification of the noise source (e.g., industrial) as well as the land use classification of the receiving property (e.g., residential).

Comment 7.4.2. It is assumed that the Construction activities considered to be exempt under the County code would be restricted to the renovation of the dock and conveyor system. Mining activities would be considered under the County code. If this is correct, it would be useful to make such a statement early in this Chapter.
Kuperberg, J. Michael, Ph.D.

Response As noted in Section 7.2.2, all construction activities would be exempt from noise limits during the day. It is not necessarily the case that dock renovations and construction of the conveyor system would be the only construction activities taking place at the site.

7.2.3 Existing Sound Levels

Comment C-8.066 (part 1 of 3). #66. It has been noted by the community that 1) existing ambient sound levels in Gold Beach and upper Sandy Shores are significantly below the noise limits imposed by the King County Code on the proposed gravel mine, however, the community notes that their understanding of the ambient sound level is that it is lower by 4-6 dBA (hourly Leq) than those shown in the DEIS. Please note whether additional testing would occur and whether such a 4-6 dBA is significant and requires additional research.
Vashon-Maury Island Community Council

Response It would be expected that ambient sound levels in the residential communities adjacent to the proposed site would be less than those established by the King County Code for assessing impacts. Measured sound levels reported in the DEIS were based on long-term measurements considered representative of typical sound levels around the project site. While ambient sound levels around the site would be expected to vary, there is no reason to expect that

hourly sound levels would consistently be 4 to 6 dBA less than those reported in the DEIS.

Comment C-8.066

(part 2 of 3). The table showing each of the hourly sound levels, which is shown in the Environmental Checklist, needs to be evaluated in addition to the summary table shown in the DEIS (Table 7-3). Table 7-3 shows nighttime L25 sound levels as a range of 36-46 at Location 2, and 24-47 dBA at Location 1. The table showing measurements for individual hours and Figures 1-12, show that sound levels in the lower part of the range persist during several hours of the night and should be considered as the baseline sound levels.

Vashon-Maury Island Community Council

Response

We assume that the “24-47 dBA at Location 1 [Sandy Shores]” is a typographical error on the part of the commentor. Table 7-3 of the DEIS reports an L25 of 34 to 47 dBA between 10:00 p.m. and 7:00 a.m. at the Sandy Shores community, not 24 dBA as indicated in the comment. The existing sound levels as reported in Table 7-3 of the DEIS characterize sound levels around the project site as they vary throughout the day and night. The sound levels shown in Table 7-3 of the DEIS are informational, but are not used as input parameters to the Environmental Noise Model, which was used to assess project-related impacts. Also, L25 levels are not generally used as indications of background sound levels. The more common level is the L90.

Comment

The DEIS is inadequate and fails to address significant issues and/or data including:

5. The noise study in the DEIS fails to discuss how sound travels over water, and fails to discuss the actual noise level the conveyor will produce. Further barge loading noise levels reflect historic levels from the DuPont site, a state of the art facility which is not comparability the Maury Island facility. Thus, noise issues are inadequately analyzed.

Huggins, Alan R.; verbatim comments from Cynthia and Kyle Cruver

Comment C-8.066

(part 3 of 3). What impacts will the loading of barges, simultaneously with tug movement and dozer loading into a hopper have on the receivers? Please provide a discussion of same, particularly in relationship to how sound travels over water.
Vashon-Maury Island Community Council

Response

The Environmental Noise Model makes use of several “ground types,” one of which is water. Water was factored into the model for the near-shore environment. As shown in Table 7-5 of the DEIS sound sources evaluated for the impact analysis included barge loading, as well as the operation of bulldozers, front-end loaders, and the conveyor.

Comment

7.10.4 Were mining activities underway when the baseline measurements were taken? Will the noise level experienced by neighbors be significantly higher than current levels or is it just the duration that will increase significantly?
Kuperberg, J. Michael, Ph.D.

Comment O-1.294

7.2.3 p. 7-5 Was the mine in operation during the time periods p.m. 16 Feb. to 11:00 am on 17 Feb.1998?
Ortman, David

Response

The mine was not operating during the monitoring periods. Sounds from the site were not audible at the measurement locations. As shown in Table 7-6 of the EIS, noise levels are not expected to increase significantly as a result of the project.

Comment O-1.295

Please explain why “average” sound levels are presented. Please present actual high dBA readings in Table 7-3.
Ortman, David

Response

Table 7-3 of the DEIS shows several noise descriptors, one of which is the L_{eq} . Noise levels vary continuously. Because of this variation, sound levels are often described in terms of the equivalent constant dB level, or the L_{eq} . Equivalent sound levels (L_{eqs}) are used to develop average noise exposure over various periods of time.

Comment C-8.065

(part 1 of 3) Since the DEIS refers to the technical report prepared by McCulley, Frick and Gilman (MFG) for the Expanded

Environmental Checklist, it would be appropriate that the MFG study be included as a technical appendix in the EIS. This would ensure all the technical details, such as hourly measured noise levels (rather than just a range of levels) and a detailed list of equipment considered in the analysis, are included. Please provide a copy of same.

Vashon-Maury Island Community Council

Response

Comment noted. The MFG Environmental Noise Analysis has been included in the FEIS as Appendix M.

Comment C-8.065

(part 2 of 3). Although the DEIS correctly identifies and applies the King County Code as the noise regulation applicable to the project, the King County Code does not provide criteria for evaluating sound level increases at receiver locations experiencing low existing ambient sound levels. Please provide same.

Vashon-Maury Island Community Council

Response

The comment is noted. The King County Code does not provide criteria for assessing absolute changes in the noise environment as a basis for evaluating project-related noise impacts.

Comment I-6.024

Will meaningful readings for Maury Island as described above be taken, and be used as a baseline for determining variance to all applicable noise criteria, specifically, but not exclusive to, the EPA Region 10 Noise Guideline for EISs, date November 1980?

Gorski, Alan

Comment C-8.065

(part 3 of 3). The Environmental Protection Agency (EPA) Region X Guidelines provide useful criteria for evaluating noise impacts taking into account existing sound levels at affected receivers. The EPA guidelines consider sound level increases of 0-5 dBA a slight impact, 5-10 dBA a significant impact, and an increase of more than 10 dBA a serious impact. Please provide a discussion of same in relationship to the site and the project.

Vashon-Maury Island Community Council

Comment I-6.021

What mitigation measures will be used by the applicant to comply with EPA Region 10 Noise Guidelines for EISs, dated November 1980, and other noise impact criteria, specifically, but not limited to, the criterion developed by the Federal Transit Administration?

Gorski, Alan

Comment I-6.020

What are the noise impacts with respect to EPA Region 10 Noise Guidelines for EISs, dated November 1980?

Gorski, Alan

Response

The EIS uses established King County noise limits, rather than EPA guidance criteria. The EIS Team has seen a paper (drafted in January 1975 and revised in 1980) that may have come from EPA, but the document is not on EPA letterhead and does not have an EPA publication number. The EIS Team is not aware of a formal EPA document that legitimizes the use of such impact criteria.

Telephone inquiries to EPA staff at Region 10 and Headquarters in Washington, DC resulted in no documentation for these criteria. EPA has not staffed a noise specialist in Region 10 for more than 10 years, and the noise staff in Washington, DC were unaware of the basis for the EPA criteria referenced. Because EPA staff are not familiar with the criteria, it is difficult to legitimize them with the claim that they represent EPA policy. In addition, the EPA “impact criteria” offer no specific guidance on the metric or averaging time to be considered. For these reasons, the “impact criteria” in these comments have not been used for this project.

Comment I-6.023

What are the background noise levels during early evening and early morning in Autumn, when many people might spent time outdoors? ... The baseline noise readings for Anderson Island ... were more meaningful than were the ones in the Draft EIS ... Meaning readings should be taken on Maury Island in the calm early morning hours in Autumn.

Gorski, Alan

Response

Section 7.2.3 and Table 7-3 document sound levels including evening levels. Seasonal variations in background noise are not required to address impacts. Sound levels were measured using accepted protocols and methodologies to characterize existing sound levels.

7.3 Impacts

7.3.1 Would noise levels resulting from the project exceed regulatory standards at nearby residences?

King County Code

Comment I-6.026

If noise levels do not comply with King County's standards at any residence, why should the applicant be allowed to operate outside the law?

Gorski, Alan

Response

The DEIS indicates that under very specific atmospheric conditions during Phases 5 and 6 (excavation to the property boundaries on the east and northeast sides of the site) of the project, sound levels could exceed the 47-dBA limit at night with a wind blowing from the southwest to the northeast. Computer modeling indicated that the nighttime noise standard could be exceeded by 1 dBA at one modeled receptor location; an increase of 1 dBA would not be audible under normal conditions. The model used is conservative, resulting in worst-case noise impacts. Because the modeling showed a minor exceedance of the noise standard under restricted atmospheric conditions, it is unlikely that operation of the facility would routinely exceed King County noise standards. Furthermore, mitigation in the form of an earthen berm would mitigate this potential impact. Additional measures (Section 7.4.3) were developed to further reduce impacts and public concerns. The County may require some or all of these measures, or may require additional measures.

Comment I-6.027

Why would this operation be granted any variance from noise standards when alternative sites can be mined without diminishing the quality of life enjoyed by surrounding residential areas?

Gorski, Alan

Response

King County is not considering granting a variance from the King County Code noise standards. The proposed project is a private action on private property that has been zoned for mineral extraction. Per SEPA, an EIS need only evaluate onsite alternatives for private proposals. The Applicant has proposed no alternative sites, and is not within King County's authority to require them to do so.

Comment I-6.036

Since there will be enforcement of the noise limit criteria and there are expected violations, please describe the manner in which these demands on law enforcement will be offset, especially concerning the limited budget of law enforcement?

Gorski, Alan

Response

Enforcement of noise limits is the responsibility of Seattle-King County Health Department staff. Budgetary impacts on local law enforcement personnel is expected to be minimal. Gravel mines typically do not require a notable police presence.

Comment C-8.067

(Part 1 of 4) #67. It has been noted by the community that projected noise levels for barge loading based on the DuPont barge loading facility could seriously underestimate noise production at the Maury Island site. Towne, Richards and Chaudiere, Inc, (DuPont EIS) measured sound levels of 85 dBA at 50 feet from gravel impacting a steel barge deck during barge loading and 84 BA at 50 feet from a tug boat operating at the dock at the Lone Star Steilacoom facility. The MFG projection of 65 dBA at 100 feet for conveyor operations is inconsistent with proposed facility. Provide additional discussion to support conclusions that the DuPont facility is a reasonable comparative vs Steilacoom.

Vashon-Maury Island Community Council

Comment C-8.067

(Part 2 of 4) Are the sound levels of nighttime activities underestimated due to underestimation of barge loading?

Vashon-Maury Island Community Council

Response

As noted in the comment, the higher sound level of 85 dBA was associated with gravel impacting the barge. At the proposed Maury Island site, the product would be more uniform, consisting primarily of sand. As a result, sound levels associated with product falling on a barge would be expected to be substantially lower. The 65-dBA sound level reported in the DEIS is the measured sound level associated with a sand and gravel mix and is consistent with what would be expected at the Maury Island facility. The estimated nighttime sound levels are not underestimated using these sound levels.

Comment C-8.067

(Part 3 of 4) Why wasn't there a discussion of sound levels during stable atmospheric conditions (temperature inversion) which leads to sound refracting downward toward receiver locations leading to higher sound levels? This effect is compounded when the

propagation path is over water, due to successive reflections of sound by the water. These weather effects can increase sound levels from barge loading at receiver locations near the shoreline by several dBA. Please provide a discussion and analysis of same.
Vashon-Maury Island Community Council

Comment I-6.022

What are the results of noise modeling when considering temperature inversions during calm periods?
Gorski, Alan

Comment O-1.297

7.3.1.3 p. 7-7. Why was a higher wind speed not used for the noise model? Please explain why ... the Coast Guard ... lists the average wind speed in South Puget Sound as 8 knots.
Ortman, David

Response

Two atmospheric conditions were modeled in the noise impact analysis: (1) a neutral condition with no wind, and (2) a wind speed of 2 meters/second. The neutral condition produces more conservative results (i.e., predicts higher noise levels) than does an inversion condition, and thus represents a worst-case condition for assessing project-related noise impacts. Stronger winds tend to increase background sound levels, thereby “masking” and reducing project-related noise levels. This masking effect is more pronounced as wind speeds increase. Therefore, project-related noise impacts under an inversion condition would likely fall between the two atmospheric scenarios evaluated in the DEIS. Noise results under calm conditions are shown in Table 7-7 of the DEIS.

Comment C-8.067

(Part 4 of 4). Please provide a discussion of the following:
1) Could higher sound levels than predicted occur due to the low source levels assumed for barge loading? Higher source sound levels would lead to violations of the King County Code during nighttime operations with wind toward the northeast. 2) The EPA Region X guidelines cited above can be applied to evaluate the sound level increases produced by the project over existing sound levels. During several phases, predicted sound levels would lead to increases of more than 5 dBA and in some cases 10 dBA, which are considered to be significant or serious noise impacts according to EPA guidelines.

Vashon-Maury Island Community Council

Response

As noted in a previous response, the 65 dBA sound level reported in the DEIS is the measured sound level associated with a sand and gravel mix and is consistent with what would be expected at the

Maury Island facility. The estimated nighttime sound levels are not underestimated using these sound levels.

As noted earlier, EPA staff are not familiar with the criteria mentioned in the comment. It is therefore difficult to legitimize them with the claim that they represent EPA policy. In addition, the EPA “impact criteria” offer no specific guidance on the metric or averaging time to be considered. For these reasons, the “impact criteria” referenced in the comment have not been used for this project.

Dockton Park

Comment I-6.037

Why is there no discussion of this substantial impact of the environmental quality of Dockton Park with respect to noise in the Draft EIS?

Response

The impact analysis focused on the nearest residential locations to the proposed project site where noise impacts would be greatest. Since Dockton Park is farther from the project site than the beach communities of Sandy Shores and Gold Beach, noise impacts due to the project would be less because of the additional distance over which sound levels would attenuate. Also, Dockton Park is separated from the project site by several hundred feet of dense trees and vegetation, which would further reduce sound levels.

Barge Loading Noise

Comment I-7.037

(part 2 of 2). Where is the discussion of the noise of dropping gravel onto the barges?

Meyer, Michael

Comment C-4.021

Of concern to people on Maury Island will be noise of a powerful tug maneuvering to shift and control the barge while docking.

Vashon-Maury Island Community Council/Thomas McKey

Response

These noises were included in the analysis. As discussed in the DEIS, project-related noise impacts were evaluated using the Environmental Noise Model which estimates noise impacts based on the sound levels of the most substantial noise-producing sources operating on the project site. Onsite noise sources that were included in the noise model included:

- bulldozers and/or loaders used to mine material;

- a loader to load material into a hopper feeding the conveyor system; and
- loading of barges, including noise from the conveyors and tugs.

Project-related noise impacts resulting from the above noise sources are shown in Tables 7-6 and 7-7 of the DEIS.

Comment C-8.070

(part 6 of 7). #70 (in part). As it is planned, the barge loading process alone will exceed King County noise standards for daytime and nighttime if the other noise sources are included, the noise impacts of this operation are a severe impact on this community. Please comment on same.

Vashon-Maury Island Community Council

Response

Other noise sources are included in the analysis.

Comment

No evaluation has been described of the impact on fishes and marine mammals of the underwater noise produced by the rock and gravel falling into an empty barge from considerable height. Is this not a concern?

Fitch, Bob and Madeline

Response

The impact of noise on fish and marine mammals is included in Section 6.3.7 of the DEIS and FEIS.

Truck Noise

Comment I-17.036

... nothing in these tables address the noise of loaded water trucks climbing the hill to the site, moving around the site

Putnam, Joshua

Response

Water trucks would be used only infrequently during dry periods when water might be needed for dust suppression. Under worst-case operating conditions, two trucks per day would be needed during these dry periods. The addition of two trucks per day to overall sound levels resulting from the project would be an insignificant source of noise.

Conveyor System Noise

Comment C-8.070

(part 3 of 7). #70 (in part). It is apparent that the conveyor at DuPont has squeaky equipment. If that is the case, then it could be extrapolated that this is a normal state of affairs for the Lone Star operations and could be expected at the Maury Island pit as well. Please provide noise calculations for a squeaky, non-maintained conveyor.

Vashon-Maury Island Community Council

Comment C-8.070

(part 4 of 7). #70 (in part). Please note, that the conveyor at Steilacoom is in disrepair and state how long it has been since it was utilized. What noise did it generate?

Vashon-Maury Island Community Council

Response

No evidence was found to indicate that the conveyor system would violate the King County Noise Ordinance.

Combined-Source of Noise

Comment I-7.038

Table 7-6 seems to imply that many of the phases of the project will actually make our surroundings quieter. The calculated value for sound levels during some phases are lower than measured existing sound levels. What does this mean?

Meyer, Michael

Response

The calculated sound levels shown in Table 7-6 for each phase of the project are project-related sound levels associated with mining, processing, and barging operations. Such activities would include bulldozers (or loaders) moving excavated materials, loaders working near the processing plant, the conveyors, and a barge being loaded. The combined noise from all of these noise sources would not exceed King County's allowable daytime sound level of 57 dBA (or 47 dBA nighttime) for an industrial noise source affecting rural residential receivers.

The information shown in Table 7-6 indicates that for each phase of the project, operational noise resulting from the project would be below the 57 dBA standard.

Comment C-8.070

(part 2 of 7). #70 (in part). The model included in this study does not identify how many pieces of equipment operating at the same time are included for computing the figures recorded. Page 2-5 lists 1-3 loaders and 1-4 dozers operating at any one time. The

computations appear to be low for potentially 3 loaders and 4 dozers operating at the same time a tug and barge are at the dock being loaded by the conveyor.

Vashon-Maury Island Community Council

Response

Equipment used in the noise modeling consisted of:

- three bulldozers (or loaders) excavating in the pit,
- the operation of the processing plant,
- one loader working near the processing plant feeding the conveyors or filling trucks, and
- a barge being loaded.

This equipment is consistent with the Proposed Action, as described on page 2-5 of the DEIS.

Comment C-8.070

(part 5 of 7). #70 (in part). It is obvious from these discrepancies that this analysis is not accurate, does not reflect the equipment being used, and grossly underestimates the impact of noise on the surrounding communities. Please correct the EIS.

Vashon-Maury Island Community Council

Response

The noise impact analysis summarized in the DEIS and included as an Appendix to the FEIS is an accurate representation of probable noise impacts that could result from the proposed project. The analysis follows methodologies that have been used at similar mining sites and is based on actual noise levels from operating equipment.

Comment

2.5.7. How does the periodic operation of the crushing plants affect site noise levels?

Kuperberg, J. Michael, Ph.D.

Comment

Table 7.1. Where does the rock-crushing machine fall on the relative sound chart?

Kuperberg, J. Michael, Ph.D.

Response

The operation of a rock crusher would not be a routine activity for the proposed project and would not be a constant source of noise. Based on estimated sound levels shown in Table 7-6, the operation

of a rock crusher would not result in exceedances of the environmental noise limits at the nearest residential receptor.

Topographical Issues

Comment C-8.070

(part 1 of 7). #70 (in part). The EIS suggests construction noise impacts on nearby homes would be lessened by topography. The topography to the nearest home is line of site over water with no intervening structure, vegetation, or contours. How can topography lessen the effects of this activity? Using this model (projecting noise impacts—DuPont DEIS) we can project the potential noise levels for homes in Sandy Shores and Gold Beach (calculations provided in detail in the comment). Both of these sites are direct line of site over water where physical barriers to noise propagation are not possible. All of these figures exceed King County noise limits for nighttime readings and most exceed the limits for daytime reading.

Vashon-Maury Island Community Council

Comment

pg. 7-6, para. 7.3.1.3. “The sound levels shown in Table 7-4 only take into account distance attenuation. Topography on the site would likely make construction sound level at 1,000 feet less than those shown.” This statement may be true, but it may not. The right wind and topo conditions can focus and increase sound levels, as well. This is very difficult to treat analytically, and should be measured at various locations around the development, as the mining progresses.

Fitch, Bob and Madeline

Response

As noted in the DEIS, the construction equipment sound levels shown in Table 7-4 do not consider attenuation due to topographic barriers between the equipment and nearby receptors. The sound levels therefore represent a worst-case scenario. Actual sound levels resulting from construction equipment depend on the type of equipment used and the amount of time it is in use, which would likely vary from day to day. As noted in Section 7.2.2, sounds from temporary construction activities are exempt from the King County noise limits during the day (7 a.m. to 10 p.m. weekdays and from 9:00 a.m. to 10:00 p.m. on weekends). There would be no construction activities outside of these periods.

Wind and Weather

Comment

This is a windy place! It frequently blows in excess of 10 mph from the southwest for days. I have a weather station that continuously displays the current wind velocity and direction and records the date, time, and direction of peak gusts. I can tell you that the choice of 4.5 mph as a condition on which to base impact case analysis is totally inappropriate! This applies to both the dust and the noise analyses.

Fitch, Bob and Madeline

Comment

This is a quiet neighborhood. On still evenings the loudest continuous noise is that of traffic from I-5, several miles to the east. I predict that, even in light breezes, the noise impact will be much greater than forecast in the EIS. This area is recognized as rural. Your protection of that status should be a foremost consideration. The impact analyses should include higher winds than 4.5 mph, with the background not “assumed” to mask out generated noise, but actually measured.

Fitch, Bob and Madeline

Comment O-1.305

Noise/Proposed Action: It states with a 2 meter/second wind blowing from the primary sound sources toward each receptor would exceed standards. Please provide an estimate of the decibel level at each receptor at the following wind speeds blowing from the primary sound sources toward each receptor: 2 mps, 4 mps, 6 mps, and 8 mps.

Ortman, David

Response

Two atmospheric conditions were modeled in the impact analysis; (1) a neutral condition with no wind, and (2) with a wind speed of 2 meters/second. The effect of stronger winds is to increase background sound levels, thereby “masking” and reducing project-related sound levels. This masking effect increases as the wind speed increases. The most conservative estimate of project-related impacts occurs at relatively low wind speeds. As a result, higher wind speeds were not modeled and are unnecessary in assessing noise impacts associated with the project.

Comment O-1.296

7.3.1.2 p. 7-6. This section states that a 2 meter/second wind was used. What is the average wind speed at this site during a 24 hour period?

Ortman, David

Response The average wind speed at the site is unknown. Calm and relatively low wind speeds result in worst-case scenarios for project-related noise impacts.

Comment O-1.298 Appendix F, “SCOPING RISK ASSESSMENT Protection Against Oil Spills in the Marine Waters of Northwest Washington State”, 18 July 1997 (prepared by Environmental Engineering Division, John Volpe National Transportation Systems Center, USDOT) to an “Addendum - Report to Congress on International, Private-Sector Tug-of-Opportunity System (ITOS) for the Waters of the Olympic Coast National Marine Sanctuary and the Strait of Juan de Fuca” by the U.S. Coast Guard, December 1997 lists the average wind speed in south Puget Sound as 8 knots (Table 3-3, p. 42).

Ortman, David

Response The comment is noted. A wind speed of 8 knots would equal 4 meters per second or approximately 9 miles per hour.

Comment O-1.308 Noise/Proposed Action: It states that sound levels under calm conditions (no wind) with maximum mining production would meet King County’s standards. Based on past wind data for this area, what is the average time period per day when there is no wind blowing during March, June, September and December.

Ortman, David

Response The average time period per day when there is no wind blowing is not needed to evaluate noise impacts.

Comment O-1.302 Table 7-7 p. 7-18. This table shows that under phase 5 and 6, modeled operational sound levels with 2 m/s wind is extremely close to the King County Allowable level for multiple receptors surrounding the mining site. Therefore, it is very important to know what the margin for error is in order to know to the likelihood that the actual operational sound levels will exceed the model projections. Please provide this information. In addition, please provide a table should operational sound levels with a 4 m/s wind.

Ortman, David

Response

The statistical variability and margin of error associated with the Environmental Noise Model is unknown. Table 7-7 of the DEIS indicates that under very specific atmospheric conditions sound levels could approach (i.e., be within 2 dBA of the limit) the 57 dBA noise limit at one residential receptor (receptor GB7) during Phases 5 and 6 of the project. All other receptor locations would be at least 3 dBA or more below the daytime limit. The Environmental Noise Model used in the analysis is very conservative, resulting in worst-case noise impacts at nearby receptor locations. Because the modeling did not indicate routine and significant exceedance of the noise limits, it is unlikely that operation of the facility would routinely exceed King County noise standards.

Water Related Issues**Comment I-2.029**

(repeated) Who will mitigate the increased level of noise caused by the thunderous nature of mining equipment that will be increased by the water and transported over to the mainland?

Clark, Rose

Comment

The DEIS has no information on the potential noise impacts on cross-sound residents.

Marsland, Donald W.

Response

The proposed project would not produce noise levels that would exceed King County noise standards at receptor locations on the mainland. It is possible that under certain conditions sounds from the project would be audible on the mainland.

Comment I-4.004

(repeated). Noise from the 24-hour mining operation will be considerable and there is no abatement policy even discussed in the DEIS. Noise near hills and water is amplified and the Lone Star operation will turn what the County has classified a “rural” area into an industrial one.

Gylland, Barbara and Fred

Comment

(repeated in Chapter 12) 2 (Of 22). Please note that Redondo, Dash Point and other water front communities will be impacted aesthetically and by cross sound noise. The noise and aesthetic discussions in the Draft EIS does not properly analyze (Chapters 7 and 11/12) the impacts to these communities. I was contacted today by a woman living north of the Redondo area who had just found out about the proposed expansion. She discussed the mining from the 1970's and how clearly the sound travelled to cross sound communities, and how the horrible noise from the barge loading prevented sleep. We are not just talking about island impacts, but regional impacts, please correct the DEIS.

Nelson, Sharon K.

Comment

Please address the potential impact of mining activity including conveyor/barge loading using similar facilities, i.e., Lone Star's Steilacoom plant, for noise levels. The review should include over-water reinforcement of noise analysis rather than simple distance based assessment, and atmospheric and wind related impacts. This review should be made available for public comment before the EIS is finalized.

Marsland, Donald W.

Response

As discussed in the EIS, using the King County Code as the threshold of significance, significant impacts can be avoided through mitigation, especially with construction of an earth berm along the western perimeter of the site and in the northeast corner to shield nearby residences. Nevertheless, the EIS acknowledges that people within the Gold Beach and Sandy Shores communities would be able to hear mining activity at the site.

In addition, the Environmental Noise Model makes use of several "ground types," one of which is water. Water was used in the model for the near-shore environment.

dBA Level Analysis**Comment O-1.299**

7.3.1.5 p. 7-8. This section is completely inadequate. Please provide a table showing the existing dBA levels from the existing mining operation.

Ortman, David

Response

Mining at the site has taken place at very low levels in the past and then only for on-island use. Noise levels associated with periodic mining activities in past years would be minimal, consisting of a loader loading materials into trucks.

Comment O-1.300

Table 7-4 p. 7-5 This table uses information from US EPA that is nearly thirty years old. Can Jones & Stokes provide more up to date references for noise sources?

Ortman, David

Response

The sound levels presented in Table 7-4 are for typical types of construction equipment used for most types of construction activities. The range of noise levels presented in Table 7-4 of the DEIS remains valid. In most cases, newer equipment is quieter than that manufactured 30 years ago.

Comment

Table 7.4 Note that most equipment produces more than 70 dBA at 50 feet. This is also the width of the buffer. The modeled values appear to assume more distance. The worst case should address activity at the edge of the 50 foot buffer and, just as in the air model, it should not use the neighbors intervening property as a “mixing zone”, but should model effects at the property boundary.

Kuperberg, J. Michael, Ph.D.

Response

As shown in Tables 7-6 and 7-7, impacts were modeled for sensitive receptors (i.e., homes) during various phases of the project. Phases 3, 4, 5, and 6 evaluated impacts to the western (Phases 3 and 4) and eastern (Phases 5 and 6) property lines.

Comment

Additionally, we would appreciate an analysis, modelling of noise as described above for not only the Proposed Action, but for Alternatives 1 and 2 and the No-Action Alternative.

Nelson, Sharon K.

Response

The Proposed Action represents the most intensive mining activity and, therefore, the worst-case impacts. If, under worst-case conditions, no impacts are identified, it is reasonable to assume that there would be no impacts under less intensive mining scenarios.

Comment O-1.301

Table 7-5 p.7-16 Please extend this table to show sound levels from these sources in dBA at 500 and 1,000 feet.

Ortman, David

Response

When distance is the only factor considered, sound levels from isolated point sources of noise typically decrease by about 6 dBA for every doubling of distance from the sound source. As a result, the sound levels at 500 and 1,000 feet for the noise sources listed in Table 7-5 would be approximately:

- Processing Plant: 83 dBA at 100 feet, 69 dBA at 500 feet, 63 dBA at 1,000 feet.
 - Barge Loading: 64 dBA at 100 feet, 50 dBA at 500 feet, 44 dBA at 1,000 feet.
 - Bulldozer: 83 dBA at 100 feet, 69 dBA at 500 feet, 63 dBA at 1,000 feet.
 - Front-End Loader: 83 dBA at 100 feet, 69 dBA at 500 feet, 63 dBA at 1000 feet.
-

Comment O-1.304

Noise/Proposed Action: It states that construction would occur only during the daytime hours and would be exempt from the King County Noise Code. Regardless of whether construction is exempt, construction noise should be listed as a significant unavoidable adverse impact.

Ortman, David

Response

The applicable standard for the assessment of noise impacts associated with the project is the King County Code. The Code establishes limits on the levels and duration of noise crossing property boundaries. The Code also specifically exempts construction equipment operating during daytime hours. While construction noises during the daytime may be audible at nearby residences, they would be relatively short-term events, lasting only for the duration of construction. As such, construction activities would not be considered a significant unavoidable adverse impact.

Comment

Table 7.6. Is L25 the appropriate “Best Case” measure against which to compare models? Isn’t it the quietest times that will be most impacted? Are all of the “Measured Existing Sound Levels” listed here the same two sets of measurements discussed previously. If so, this should be clarified.

Kuperberg, J. Michael, Ph.D.

Response The most appropriate measure for evaluating impacts is the average noise level. This is best represented by the L25.

Comment Table 7.7. How do the authors make the distinction between Rural and Residential property within the same neighborhood? Elsewhere in the report, both subdivisions are referred to as “residential communities” (see, for example, page 9.1). As such, there would be many more instances of samples exceeding criteria than those shown in this table.
Kuperberg, J. Michael, Ph.D.

Response Rural and residential classifications are based on King County zoning (see Chapter 9). The project is designated as a Mineral Resource Area and is classified as an industrial noise source. The site is bounded by individual residences and the community of Gold Beach and Sandy Shores. For the impact analysis, the more conservative noise limits associated with the rural designation were used for impact analyses.

Noise and 24-hour Operation

Comment I-3.006 ... DEIS does not adequately address: noise pollution from 24-hour operation of heavy equipment ...
Pearce, Judith Wood

Comment I-7.037 (part 1 of 2). Will there be continuous noise from the mine. Will there be continuous barge noise all night?
Meyer, Michael

Comment Noise from the 24-hour mining operation will be considerable and there is no abatement policy even discussed in the DEIS. Noise near hills and water is amplified and the Lone Star operation will turn what the County has classified a “rural” area into an industrial one.
Gylland, Barbara and Fred

Response The noise impact analysis presented in the DEIS adequately addresses noise impacts from the proposed project and proposes mitigation measures to reduce impacts where they have been identified. As noted in the DEIS, barge loading could occur 24 hours a day, depending on market demand and individual contracts. Other activities would vary on a project-by-project

basis, but would not occur outside of 6 a.m. to 10 p.m. Monday through Friday and 9 a.m. to 6 p.m. on Saturdays.

General Noise/Quality of Life

- Comment** Would the noise heard by adjacent communities result in a degradation of quality of life over the multi-decade duration of the project?
Kuperberg, J. Michael, Ph.D.
- Comment** (7). The noise created by this massive operation will be destructive to humans, animals, birds, fish and anything else within hearing.
Larson, Alice C., Ph.D.
- Comment** The noise studies that were conducted for the DEIS were limited to the Lone Star site vicinity. ... It just makes no sense that I will not be effected by the excavation taking place at the Lone Star site. To this I disagree again with the current DEIS.
Chilbert, Mark
- Comment** The 18-hour noise study conducted by the County's consultants could not possibly be adequate to determine the impact of a massive 24-hour per day mining operation on a rural/residential neighborhood where the loudest noise at night is the sound of the waves crashing on the beach.
Boyle, Karen
- Response** The impact analysis prepared for this project used accepted protocols and methodologies for such analyses to characterize potential impacts associated with the project. "Quality of life" is a subjective determination made by each individual.

7.4 Adverse Impacts and Mitigation

7.4.1 Significance Criteria

- Comment** What is the definition of "significant impacts"? Are sub-significant impacts expected? Is the daytime exemption from noise limits acceptable to neighboring residential subdivisions?
Kuperberg, J. Michael, Ph.D.
- Response** For purposes of this EIS, significant impacts are those operational noise impacts that would exceed the applicable noise limits

established by King County (see Table 7-2 of the EIS). There are no criteria for establishing “sub-significant” impacts. The daytime exemptions are applicable only to construction-related activities.

7.4.2 Measures Already Proposed by the Applicant or Required by Regulation

Comment G-3.030

30. Section 7.4. Mitigation Measures, states that strobe lights are proposed in stead of back-up warning devices. For Chinook salmon other marine species, the impact of strobe lights could be much worse than from backup beepers.

People for Puget Sound

Response

The use of strobe lights to modify fish behavior has shown limited success in experiments attempting to deter fish away from dam turbine intakes. The range over which strobe lighting is effective is limited to several feet and most machinery would be located at least several hundred feet from the shoreline. It is unlikely that the use of strobe lighting on machinery in the mine would have any effect on marine organisms at the site. No strobe lighting would be used at the dock or over the water. For further discussion on the effects of light on Marine organisms refer to Section 6.3.9 in the FEIS.

Comment

7.9.1. Is it possible to model the effects of the proposed berms? How will these values be verified/enforced? What will be the timeline, criteria and consequences for non-compliance?

Kuperberg, J. Michael, Ph.D.

Comment C-2.010

The technical basis for a twelve-foot berm as a noise barrier is not provided in the DEIS. The engineering and public safety criteria that went into this berm sizing should be explained for public comment. Similarly, noise along the tidal shoreline and that which is propagated under the water surface from shoreside and barge operations is a significant, overlooked aspect in the proposed DEIS. The applicant should perform studies and analyses sufficient to document the level of sound in these areas, and demonstrate that those levels are below any hazard level to the natural environment.

Ernst, William

Comment C-8.068

7 4 1. The proposed berms on the western perimeter and northeast corner should be shown in the DEIS site plans with cross-sections for their acoustical effectiveness. Berms must be properly

documented in the project EIS to become part of the proposed action. It is not clear from the text whether the effects of the berms were included in the predictions shown in Tables 7-6 and 7-7. Separate sound tables with and without mitigation would be required to demonstrate mitigation effectiveness. For the sound levels from barge loading to be consistent with reference levels measured at the DuPont facility, the project would need to incorporate the same noise mitigation measures required at DuPont.

Vashon-Maury Island Community Council

Response

Earth berms are an accepted measure to mitigate noise impacts. The earth berms were modeled in the supporting technical analysis for the DEIS and determined to be an effective means of reducing sound levels at the nearest residences. Detailed design of mitigation measures is not required for EIS-level documents.

With respect to underwater noise, there is some evidence that some mammals may be sensitive to low-frequency sound. The underwater environment is already very noisy due to sounds created by water, wave action, and marine vessels. There is very little attenuation of sound under water; as a result vessel sounds from throughout Puget Sound contribute to underwater background sound levels. In general, the number of in-water noise sources would have to double to increase overall underwater sound levels by 3 dB. The addition of four tugs spaced throughout the day would have a minimal impact on the underwater noise environment.

Comment C-8.071

(part 2 of 2). Applicant proposes to build a 12-foot berm to provide a barrier between operating equipment and nearby residences. That it is not practical or feasible to build a berm of adequate height to avoid impact by operating equipment on surrounding residences is really insignificant. Such a construction might impact one or two residence, but the remainder of the community would remain exposed to this activity. That is not to suggest that the residences affected should not be protected, but that the protection offered provides no benefit to the majority of property owners around the property.

Vashon-Maury Island Community Council

Response

The DEIS did not identify significant numbers of residences that would be impacted by the proposed project. For those that were impacted, an earthen berm was considered to be an effective means of reducing adverse impacts.

Comment O-1.309

Noise/Mitigation: It states that a 12-foot berm would be constructed along the western perimeter and in the northeastern corner of the site to mitigate for noise. Please provide any documentation showing that such a berm would have any significant impact on noise levels.

Ortman, David

Comment O-1.306

7.4.1 p.7-9. What documentation supports the statement that construction of a 12-foot berm would contribute to reduction of noise between operating equipment and nearby residences?

Ortman, David

Response

Noise barriers are solid obstructions built between noise sources and receivers. Effective noise barriers can reduce noise levels by 10 to 15 dB and can be formed from earth mounds or high, vertical walls. Earth berms are often considered for noise abatement in transportation studies. The Federal Highway Administration (FHWA) in its “Highway Traffic Noise Analysis and Abatement Policy Guidance” discusses the effectiveness of earth berms for reducing highway noise. The same principle would apply to their consideration at the proposed site.

7.4.3 Remaining Adverse Impacts and Additional Measures

General

Comment I-6.029

Since the Draft EIS has already stated categorically that noise levels will exceed King County standards at certain residences, during the nighttime barging, and if there’s wind, please describe these additional sound reduction measures in detail.

Gorski, Alan

Comment I-6.038

... Draft EIS ... mentions of “Additional Mitigation Measures” ... What are these “Additional Mitigation Measures”?

Gorski, Alan

Response

As noted in the DEIS, several types of mitigation were considered in the analysis: (1) measures proposed by the Applicant in response to known environmental issues; (2) measures required by existing regulations; and (3) measures that may be applied by King County through its discretionary authority under SEPA. These measures were developed following the analysis to identify possible ways to reduce impacts or address public concerns. The County may require some or all of these measures, or may require additional measures.

Comment I-6.039

How can the public comment on them [“Additional Mitigation Measures”]?

Gorski, Alan

Response

The “Additional Measures for Consideration to Further Reduce Impacts” were included as part of the DEIS. Comments were solicited on all components of the DEIS, including the “Additional Measures for Consideration to Further Reduce Impacts.”

Comment I-14.009

A noise abatement plan is needed and a King County advisory committee must be ... established with membership including Island and Lone Star members.

Smith, Eugene A.

Response

The elements of a noise abatement plan, including provisions for independent noise monitoring and reporting to King County, are contained in Section 7.4.3 of the FEIS. This section also includes provisions for establishment of an advisory committee to monitor and evaluate complaints relating to the project. The formation of such a committee would be at the discretion of King County and the community.

Comment

Table 7-5 specifically shows individual pieces of equipment producing noise in excess of the King County allowable standards at distances of 1,000 feet. Also, the idea of having a problem solving committee composed of a resident, a Lonestar employee, and a KC representative would be doomed from the start. By the time these three could get together to discuss a problem, the problem would be long gone. There would have to be an infraction activated procedure which could immediately end the infraction, or else there could be a huge stack of infraction reports before the committee could even meet.

Andrus, Steven R.

Response

The comments are noted.

Hours of Operation

Comment I-6.025

Commit to restricted Nighttime Operations-Since noise modeling assumed that nighttime operations are limited to a single loader and the barge loading, the operating permit should specify that

restriction as an enforceable operating limit until Lone Star completes field measurements to confirm that additionally activities would not threaten the nighttime noise limit (5 dBA above background) ... If ... the above restriction is not included as an enforceable operating limit, why not?

Gorski, Alan

Response

The comments are noted. Restricting the hours of operation of the facility is a measure that will be considered by King County.

Noise from Barge Loading

Comment I-17.035

Nothing in these tables [Tables 7-4 and 7-5] addresses the noise levels from the conveyor belt itself or the noise of gravel being dumped into barges at the end of the conveyor belt.

Putnam, Joshua

Response

Table 7-4 of the DEIS identifies typical noise levels that would be associated with construction activities at the proposed site. As such it is not intended to convey information about conveyor operations or barge loading operations. The noise levels shown in Table 7-4 would typically be associated with reconstruction of the conveyor system and repairs to the loading dock.

Sound levels shown in Table 7-5 were source sound levels used to characterize the potential impacts associated with the project. These sound levels were used in the noise model. Barge loading operations (including operation of the conveyor belt system) are shown in Table 7-5 and were used in the noise modeling.

Comment C-8.071

(part 1 of 2). #71. Table 7-5, Noise: Summary of Source Sound Levels “Barge Loading” listed 64 dBA based on “Measured the sound levels of a barge being loaded at Lone Star’s DuPont facility. The material being loaded, rock mixed with sand, is anticipated to be similar to the material extracted from the Maury Island pit. The sound level of the loading represented above does not include the warning alarm sounded at the onset of loading or the squeaks of the conveyor. Both of these sounds are louder than the barge loading but can be effectively mitigated through the use of strobe lights for the alarm and adequate maintenance for squeaky equipment.” The EIS should provide a discussion of these points.

Vashon-Maury Island Community Council

Response

The comments are noted and discussed in the DEIS and do not require further discussion.

Comment C-8.072

7 4 2. 72#. The DuPont conveyor is described in the DuPont EIS as fully enclosed with rubberized transfer points and a telescoping loading mechanism which can be lowered to within 5' of the barge deck to reduce noise when loading. The barge is moved with electric cable system to avoid using tugs to move the barge. What type of noise will be generated by sand/gravel dropping into a steel barge? Why isn't the best management practice for such a loading facility suggested for the Maury Island site - economics or political? In a DEIS prepared for Des Moines for a conveyor to unload sand and gravel at an offshore facility and transport it to the Third Runway project, the following proposals were made for the conveyor: The conveyor belt from the unloading facility to the shore and at specified areas for the remaining 4.8 miles would be completely covered to prevent spillage of material over water, and lined with noise reduction material to attenuate noise production; transfer points will be enclosed and lined with noise reduction material; the unloading facility will use rubberized material on the hopper to limit noise and the barges will have a 10-foot fence to limit noise production; in residential areas, a 10-foot concrete wall will be constructed between the conveyor and residential areas to limit noise impact. Please comment as to what noise reduction material and specifications represent the best available science and/or management for the Maury Island facility. The proposal to have an independent organization monitor noise and report to King County has some merit. It would be much more acceptable if it were based on the agreement reached in the DuPont EIS. However, with the proposed activity already shown to have highly probable impacts significantly exceeding King County noise levels, other adjustments to this proposal should be instituted prior to the development of any noise-monitoring program. The program should then be based on the agreement reached in the DuPont EIS.

Vashon-Maury Island Community Council

Response

The DEIS evaluated impacts as they related to the project proposed by the Applicant. The unloading system proposed for the Des Moines project was for a very different kind of project that would have passed within approximately 20 feet of several residences. Under that situation enclosing the conveyor system and constructing concrete walls between the conveyor system and nearby residences was warranted. Because of the greater distance

to the nearest residences, such measures are not warranted for the Maury Island project.

Comment O-1.307

7.4.2 p. 7-10 This section states that Taiheijo Cement Corp. would have to implement additional measures to bring project-related sound levels into compliance with the criteria identified earlier. Since the proposed project is already projected to violate King County noise standards (p. 7-8) why are these measures not required from the start?

Ortman, David

Response

The DEIS indicates that under certain atmospheric conditions during Phases 5 and 6 of the project, sound levels could exceed the 47 dBA limit at night with a wind blowing from the southwest to the northeast. Mitigation in the form of an earthen berm would mitigate this potential impact.

Comment C-2.015

Management systems are needed to ensure accountability to King County and the citizens of Maury-Vashon Islands. Objective measures of accountability are critical to a positive and long term relationship between Lone Star and its Maury Island neighbors. Lone Star, King County, and other regulatory authorities should welcome the formation and input of an ongoing, citizen oversight committee if or when permission to mine is granted.

Ernst, William

Response

The comment is noted. Formation of such an advisory committee has been included in the FEIS as a potential mitigation measure.

Comment G-1.014

14. While we have not generally concerned ourselves with the noise implications of this project, the mention of monitoring leads us to suggest that noise monitors should be located and operational continuously, where levels may exceed 3 dBA above ambient during the night, and 6 dBA above ambient during the day. A noise-monitoring plan should identify when operations can be shut down because of noise levels.

Seattle Council on Airport Affairs

Response

The comments are noted.

7.5 Cumulative Impacts

Comment C-8.073

7 5. 73#. The cumulative impacts of this project on the existing noise levels surrounding the site would exceed King County's noise regulations. In addition, they would exceed the EPA's noise level increase threshold of increases in ambient noise levels of 10 dBA. There is no evaluation of the noise levels on wildlife, salmonids (listed as endangered species), rockfish, lingcod, Pacific herring, or other wildlife in the area. The cumulative impact section must be redone with adequate attention provided to these factors. Please include discussion of noise impacts from dock repairs on these species, horses, and wildlife as well (see also section 5.5.3 and 6.3.7).

Vashon-Maury Island Community Council

Response

The proposed operation is similar to other mining activities that have occurred throughout the region for decades. The noise from such activities have not been shown to have any impact on the species mentioned in the comment. See also responses to Chapter 5.

7.6 Significant Unavoidable Adverse Impacts

Comment I-8.005

... no mitigation such as for noise level could change the dangers or do a thing to stop plummeting property values.

Kritzman, Ellen B.

Response

Noise levels from the proposed project are not expected to negatively impact nearby property values.

Comment C-8.074

7 6. 74#. The unavoidable impacts of this project are severe. In addition, they are not subject to mitigation without a total revamping of the proposed project. Indeed, even with a conveyor such as the one used at DuPont, it is unlikely that the noise levels of King County could be achieved. Based on the equipment being projected for this project, the noise levels are going to exceed County limits. They are easily avoidable, however, by accepting the no-action alternative. Please provide a discussion of same.

Vashon-Maury Island Community Council

Response

The DEIS did not identify significant unavoidable adverse impacts resulting from the project.

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